DOCUMENT RESUME

ED 110 945 CS 002 097

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TITLE The Effect of Various Teaching Techniques, Involving the Cloze Procedure, Upon the Reading Achievement of Community College Students.
PUB DATE May 75
NOTE 17p.; Paper presented at the Annual Meeting of the International Reading Association (20th, New York City, May 13-16, 1975)

EDRS PRICE MF-$0.76 HC-$1.58 Plus Postage
DESCRIPTORS *Cloze Procedure; Disadvantaged Youth; Junior Colleges; *Minority Groups; *Reading Achievement; Reading Improvement; *Reading Instruction; Remedial Reading; Teaching Methods

ABSTRACT

The purposes of this study are to ascertain the effectiveness of the cloze procedure when used as part of the remedial reading instruction in community college classes, and to determine if one type of teaching presentation--using the cloze procedure--is significantly superior to another. One hundred students from Bronx Community College who obtained a raw score of less than 60 on the Nelson-Denny Reading Test, Form A, served as participants in this study. Findings indicated that the reading achievement scores of community college students improved when the cloze procedure was used as part of the remedial instruction, but that there is no one teaching method in college remedial reading classes which emerges as superior to the others when used in conjunction with the cloze procedure. (RB)

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# THE EFFECT OF VARIOUS TEACHING TECHNIQUES, INVOLVING THE CLOZE PROCEDURE, UPON THE READING ACHIEVEMENT OF COMMUNITY COLLEGE STUDENTS.

Nathan Pessah

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# The Effect of Various Teaching Techniques, Involving the Cloze Procedure, Upon the Reading Achievement of Community College Students.

Community college students arrive with the mixed expectations of any neophyte group. The City University of New York has instituted "open enrollment" or a system whereby all who possess a high school diploma are entitled to admission. Garrison (1968) has said that many entering college freshmen are close to being functionally illiterate while at least 50% of junior college students need some sort of remedial instruction.

Reading is a tool, a tool which a member of our society must use continually. Generally, the more educated a person becomes, the more it becomes necessary for him to gain meaning from the printed word in the performance of his job. One way that reading has been taught (albeit relatively rarely) is through the cloze procedure which was originated by Wilson L. Taylor (1953) when he synthesized work in communications theory, psychology and statistics. Cloze is defined as a method whereby deleted words disrupt language patterns and readers attempt to insert the correct word (make a closure) based upon experiential or contextual clues. Cloze has been used as a measurement device concerning comprehension, readability and certain language variables related to reading. It has also been used as a teaching device. Yet Culhane (1970) has said that the one

important fact that has emerged from studies by Jenkinson and by Rankin is that the cloze method is as good as, and in many ways better than, existing methods for teaching and testing reading comprehension.

The purpose of this study is two - fold. First, a determination will be made concerning the effectiveness of the cloze procedure when used as part of the regular remedial reading instruction in classes of community college students. Secondly, the author will attempt to determine if one type of teaching presentation, using the cloze procedure, is significantly superior to another.

## General Statement of the Problem

Is the cloze procedure effective in teaching reading comprehension to community college students and, if so, how can it best be presented?

## Specific Problems

1. Has there been a significant improvement in the reading achievement of community college students as a result of teaching with the cloze procedure as part of the regular remedial reading instruction?

2. Is there a significant difference in improvement in the reading achievement of community college students when the cloze procedure is used as part of the regular remedial reading instruction as opposed to when it is not?

3. Is there a significant difference in improvement in the reading achievement of community college students when the cloze procedure is used as part of the regular remedial reading instruction and the independent variable is the method of presentation?

## Hypotheses

1. The reading achievement scores of community college students, measured by the Nelson-Denny Reading Test, Form A, will indicate a significant improvement when the cloze procedure has been used as part of the regular remedial reading instruction.

2. Classes that have been taught with the cloze technique as part of their regular remedial reading instruction will show significantly greater improvement in reading achievement than those that have not, as measured by the Nelson-Denny Reading Test, Form A.

3. One teaching method in college remedial reading classes will emerge as superior to the others when using the cloze procedure as measured by the difference between pre- and post-test scores on the Nelson-Denny Reading Test, Form A.

## Procedure In The Collection Of Data

### Subjects

This study has been conducted in ten "B" sections of the Reading Development Laboratory (RDL) course

that is offered in the Department of Special Educational Services at Bronx Community College. Students who have not attained a minimum raw score of 60 on the Nelson-Denny Reading Test, part of the entrance battery. are required to take the RDL course and those whose raw score was between 40 and 59 (reading grade level 9.0 to 11.4) register for the "B" section.

The final total number of students in the entire sample was 100. 68 of these students are female and 32 are male. These students are almost entirely from minority groups and most of them can be termed as disadvantaged.

Instructors

Five instructors were involved in the sense that they volunteered their class time, however, the principal investigator taught all classes in which the cloze procedure was presented. Individual instructors administered the cloze tests once they became routine as well as the post Nelson-Denny Reading Test.

Instruments

1. The Nelson-Denny Reading Test, Form A, was administered as a pre-test and five weeks later was again given as a post-test. Its initial purpose was to measure the reading achievement of the students at this point in mid-semester and to see if there was any significant variation among the classes. As a post-test, its purpose was to measure gain in reading achievement.

This test has been standardized with students from

152 schools and 33 colleges. Included in the latter group are four junior colleges. Reliability, computed by the equivalent forms method, is as follows: Vocabulary, .93; Comprehension, .81; Total, .92.[1]

2. Cloze. A battery of six cloze tests was prepared from paragraphs taken from, Senior, Reading For Understanding.[2]

The first and sixth cloze tests, consisting of 12 paragraphs with two deletions in each paragraph, were the same except for order of presentation. The first test was in ascending order of difficulty, according to reading grade level, while the sixth test was in descending order. Reading grade level (RGL) was the same for two contiguous paragraphs: 8.5, 9.5, 10.5, and 11.5 plus or minus .2.

RGL was computed by the Dale-Chall Readability Formula. However, since the RGL arrived at by the Dale-Chall formula is not specific, it gives only two year estimates, the RGL figures arrived at were interpolated.

Tests 2 - 5 consisted of three paragraphs at one RGL. Each paragraph had two deletions making a total

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1. M.J. Nelson and E.C. Denny, rev. James I. Brown, Examiner's Manual, The Nelson-Denny Reading Test. (Boston: Houghton - Mifflin Company, 1960), Pp. 26 and 30.

2. Thelma Gwinn Thurstone. Senior, Reading For Understanding. (Chicago: Science Research Associates, Inc.), 1965. A boxed kit of 400 cards with 10 different paragraphs and questions on each card.

of six blanks for the test. These tests were given in ascending order of difficulty to the six classes that received cloze instruction.

Deletion System

Rather than delete ever $n^{th}$ word as Taylor (1953), Bloomer (1962), and many others have done, it was felt that selective deletions with clues definitely provided in the paragraph would be of greater interest to the students. They would be involved with comprehension of the whole paragraph rather than just the part where they would be filling in a blank that could fall anyplace in the sentence. Students were informed at the time of testing that clues to the missing word could be found in the paragraph.

Three types of context clue were used as the basis for a deletion: 1. direct explanation, usually written within the same sentence; 2. indirect explanation; and 3. inferred from the general sense of the story. Each paragraph was from 68 to 114 words in length and had two deletions, however, no sentence had more than one deletion. Each test always devoted one-third of the number of deletions to each type of context clue so that each type was evenly represented.

Scoring

1. No statistical use was made of the scores on the various cloze tests, however, the scores were given to the students as part of the teaching technique.

2. Scoring of the exams was accomplished by two secretaries working under the direct supervision of the

investigator. A list of correct answers was developed as not only synonyms (Rogets Thesaurus was used) were accepted as correct but also words that could be implied and "fit" the context. Two points were given for a correct answer while one point was given for a partially correct answer. A partially correct answer was one where the correct root was indicated but the word was an incorrect part of specch.

3. Multiple choice answers to the Nelson-Denny Reading Test were marked by the students on self-marking answer sheets. However, the tests were not scored by the students but by the same two secretaries as mentioned in "2" above.

**Procedure**

1. Treatment. All students, both experimental and control, received the Nelson-Denny Reading Test, Form A, as the first test of the study during the eighth week of the semester and all students received this same test again, at the conclusion of the research, five weeks later. The students were informed and understood that neither the Nelson-Denny Reading Test nor any of the cloze test which were given as part of this research would have any direct bearing on their final grade.

2. Population. The study began with a total of 179 students in the experimental and control groups. However, only students who were in attendance during the entire five weeks of the study were considered, thus making the final total: n= 100.

a. The control group, referred to as NT, consisted of four sections and received the regular instruction of the RDL class. n = 39.

b. The experimental group was divided into three groups and had two classes in each. Total n = 61.

$T_1$ = completely individualized group. They were given: the tests, their scores, correct answers to the tests, and materials to assist in learning.[3] n = 22.

$T_2$ = lecture discussion group. They were given: the tests, their scores and the correct answers to the tests. In addition, they received two lectures involving the ability to distinguish context clues and participated in discussion concerning the logic behind their selection of answers.[4] n = 19.

$T_3$ = combination group. Methods of presentation that were used for groups $T_1$ and $T_2$ were combined. n = 20.

3. Scheduling. 50% of both the control and experimental group classes met twice a week on Tuesday and Thursday with the remaining 50% of the classes meeting three times a week on Monday, Wednesday and Friday. Those classes that met thrice weekly had one test per lesson while those classes that met twice weekly, had, on two occasions, two cloze tests during one class

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3. Selected parts of the materials listed below were assigned to students depending upon the type of context clue that they missed.
   a. Free To Read, pp. 8, 9, 36, 57, 108, 128, 134, 151.
   b. 88 Passages To Develop Reading Comprehension, Question 6.
   c. Vocabulary For The College Bound, Chapter 2.
   d. Listen and Read, tapes MN#2, MN#3, and GHI-1 #4.
   e. Tactics In Reading I, Card 4; back and card 5, front.
   f. Tactics In Reading II, cards 4 and 5.

session. In addition, a one week spring recess came during the fourth week of the study.

## Results

To test the first hypothesis a "T" test was performed using the pre- and post-test scores from the Nelson-Denny Reading Test, Form A. Results are listed in table one.

| | N | T | Significant at .01 level | df |
|---|---|---|---|---|
| Control Group | 39 | 5.47 | yes | 38 |
| Experimental Group | 61 | 9.36 | yes | 60 |

Table One

We can say with 99% certainty that significant improvement in reading achievement will occur when we use the cloze procedure. However, it must also be noted that significant improvement at the .01 level of confidence was achieved by the control group as well.

In order to test hypotheses two and three an analysis of variance was first performed which indicated, as shown in table two, that a significant difference existed at some point between groups in the sample. The F value of 20.69 is significant at the .01 level of confidence.

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4. Wesley J. Schneyer first hypothesized the technique of group discussion re: cloze. See list of works consulted.

| Source | df | SS | mss | F |
|---|---|---|---|---|
| Between | 3 | 60.64 | 20.21 | |
| Within | 96 | 93.79 | .977 | 20.69 |
| Total | 99 | 154.43 | | |

Table Two

Duncan's Multiple Range Test For Nearly Equal N's was performed in order to discover where this significant difference was. After reducing the NT (control) group to n = 21 by employing a table of random numbers, the following information, as depicted in table three, was arrived at.

| | $\bar{X}$ | $T_1$ | $T_3$ | $T_2$ |
|---|---|---|---|---|
| NT | .535 | .592 - R2 | .795 - R3 ✓ | .935 - R4 ✓ |
| $T_1$ | 1.127 | | .20 - R2 | 35 - R3 |
| $T_3$ | 1.32 | | | .15 - R2 |
| $T_2$ | 1.47 | | | |

Table Three

R = range

✓ = range shows a significant difference

The groups are arranged according to their arithmetic mean ($\bar{X}$) and a significant difference exists between groups only if the range figure exceeds the following: R2 = .6188, R3 = .5889, and R4 = .6680. As shown in the table, the only significant differences that occur lie between groups: NT vs. $T_3$ and NT vs. $T_2$.

## Discussion and Conclusions

What is meant by reading achievement? Reading achievement in the Nelson-Denny Reading Test is the total score derived from adding a Vocabulary score to a Comprehension score which is weighted twice. As defined in this research, reading achievement is primarily comprehension. However,

when a student tries to complete a blank by contextual clues, the student is also learning how to deduce words that he does not know; thus he is beginning to add them to his vocabulary.

The first problem posed in this study has been answered as the first hypothesis has been proven correct by the statistical procedure employed. The reading achievement scores of community college students, measured by the Nelson-Denny Reading Test, Form A, indicate a significant improvement when the cloze procedure has been used as part of the regular reading instruction. The answer to this problem may appear deceptively simple until one understands that not until relatively recently, Martin (1968), has cloze been used as part of the regular remedial instruction and even then it was used in an English class. Bloomer (1962) and Guice (1969), among others, used the cloze procedure as a teaching technique during their research, however, they did not use it with the regular curriculum. This study uses cloze as a teaching technique within the regular class curriculum.

The conclusion arrived at in regard to the second problem is drawn from the second hypothesis: classes that have been taught with the cloze technique as part of their regular remedial reading instruction will show significantly greater improvement in reading achievement than those that have not as measured by the Nelson-Denny Reading Test, Form A. When the control group (NT) was compared to the first experimental group ($T_1$) there was no significant difference in reading achievement. (Table three)

Yet, when the NT group was compared to the second ($T_2$) and third ($T_3$) experimental groups there was a significant difference in reading achievement. How can this be explained? Perhaps involvement with cloze ($T_1$) is not enough to produce a significant difference in reading achievement unless there is also discussion of the logic behind the answers coupled with teacher input ($T_2$ and $T_3$ ).

The third problem, which attempts to discover if one teaching presentation is superior to the others when the cloze procedure is employed, refers to the third hypothesis, " that one teaching method will emerge as superior ... ." This third hypothesis must be rejected as there is no significant difference in the reading achievement test scores of students in experimental groups $T_2$ or $T_3$. (Table three). Instruction given to $T_1$ is not considered as being as good a cloze teaching technique as $T_2$ or $T_3$ despite the fact that there was no significant difference between any of the experimental groups. The reason it is not is because there was no significant difference between $T_1$ and NT while there was a significant difference between $T_2$ and $T_3$ vs. NT. (Table three)

In addition to a discussion about why the blank was filled in in a certain way, the deletion system is the heart of cloze. By deleting only some words which could be deduced from specific context clues, achieving a closure becomes a learning (thinking) experience. Motivation is quite high because students feel challenged and know that if they search the paragraph rigorously they can find the answer.

The last point which should be discussed is the number in the sample. It was reduced from 179 to 100 students because those who had one or more absences during the five weeks of the research were eliminated from consideration. The feeling was that if a student missed any teaching instruction (either experimental or control) his final Nelson - Denny Reading Test result might be affected.

## Limitations and Recommendations

Perhaps the most serious limitation of this study is that only the principal investigator was directly involved despite the fact that other instructors and assistants were used. This situation could easily be remedied in another study.

The interval of time between commencement of this study and final testing was five weeks. This might lead to the conclusion that the results of the Nelson-Denny Reading Test lack reliability because of the short period of time between administrations and that results, as indicated by achievement scores, were not permanent. In answer to these two points: 1. experience has shown that the amount of carryover of information is not significant, despite the fact that the same form of the Nelson-Denny Reading Test is administered at a five week interval, and 2. it is felt that since this study was conducted during the eighth to thirteenth weeks of a fifteen week semester it is more likely that the information received will be assimilated than if cloze had been presented from

the second to the seventh weeks. One might compare the scores of cloze tests given to a control group and to experimental groups $T_2$ and $T_3$ to see at what point significant improvement occurred. It is recommended that a study of the type conducted be carried on over the range of an entire semester.

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